Motivation for New Measurements of the Am Isotopes.

Olivier H. Bouland

CEA / Cadarache, France

Starting from the observation that the ^{241}Am neutron data were not re-evaluated for jeff3.0 and that three new measurements have been performed since the official release of jef2.2 in 1990, a synthesis on the ^{241,242,243}Am isotopes neutron data has been performed. Various comparisons have been done with recent evaluated data files (JENDL3.3, ENDF-BVI.8, BROND3 and JEFF3.0). Large discrepancies between differential measurements and 'integral' data relative to americium have motivated a review of the available experimental data and evaluated files. This work points to strong discrepancies on branching ratio values between the various evaluations and their actual treatment in current reactor calculations. In addition, the need for new measurements to reach the desired target accuracy on Am isotopes neutron data is emphasized and a list of appropriate new measurements is provided. This paper shows that considerable work is needed to produce well-motivated measurement specifications starting from the users' needs.

Email: olivier.bouland@cea.fr